

Amendments to Claims

IN THE CLAIMS:

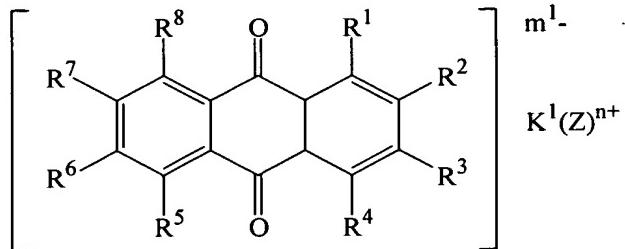
1. (Previously Presented) A thermoplastic resin composition for laser welding comprising:

- 1) thermoplastic resin; and
- 2) laser-transmitting black colorant comprising amine salts of anthraquinone dye and monoazo metal complex dye.

2. (Previously Presented) A thermoplastic resin composition for laser welding comprising:

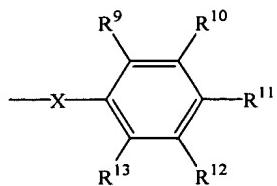
- 1) thermoplastic resin; and,
- 2) laser-transmitting black colorant comprising a mixture of
  - a) amine salt of anthraquinone dyes of formula [I] or formula [II]

wherein formula [I] is:

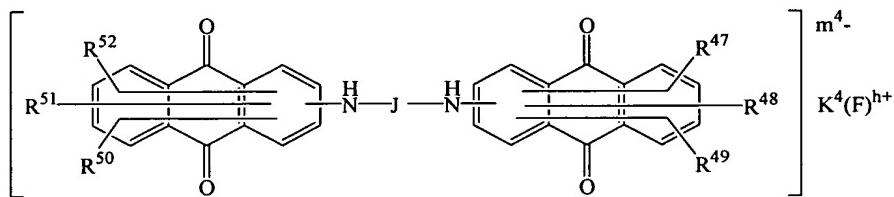


wherein R<sup>1</sup> to R<sup>8</sup>, which may be the same or different, are independently selected from the group consisting of H, alkyl, aryl, alkenyl, alkoxy, amino, hydroxy, halogen atom, acyl, acyloxy, acylamide, acyl-N-alkylamide, carboxyl, alkoxy carbonyl, cyclohexylamide, sulfonyl, formula [I-a], or -Y-W, and at least one of R<sup>1</sup> to R<sup>8</sup> is of formula [I-a]; wherein Y is S, O, or NH; and wherein W is selected from unsubstituted or substituted alkyl group, alkenyl group, and unsubstituted or substituted aryl group; wherein (Z)<sup>n+</sup> represents a cation derived from an organic amine compounds or a basic dye; wherein n is 1 or 2, m<sup>1</sup> is an integer from 1 to 4 and K<sup>1</sup> is the ratio of m<sup>1</sup> / n;

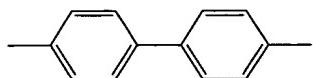
and wherein formula [I-a] is:



wherein X is O or NH, and R<sup>9</sup> to R<sup>13</sup>, which may be the same or different, are independently selected from the group consisting of H, alkyl, aryl, alkenyl, alkoxy, amino, N-alkylamide, N-arylamide, hydroxy, halogen atom, acyl, acyloxy, acylamide, acyl-N-alkylamide, carboxyl, alkoxycarbonyl, or sulfonyl; wherein at least one wherein at least one of R<sup>1</sup> to R<sup>13</sup> is sulfonyl group; wherein formula [II] is:

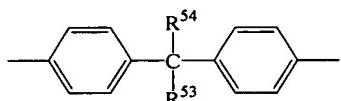


wherein R<sup>47</sup> to R<sup>52</sup>, which may be the same or different, are independently selected from the group consisting of H, alkyl, aryl, alkenyl, alkoxy, amino, N-alkylamide, N-arylamide, hydroxy, halogen atom, acyl, acyloxy, acylamide, acyl-N-alkylamide, carboxyl, alkoxycarbonyl, or sulfonyl; and at least one of R<sup>47</sup> to R<sup>52</sup> is of sulfonyl, and formula J in formula [II] is selected from formula [II-a] or formula [II-b] and binds two anthraquinone; wherein formula [II-a] is:



or

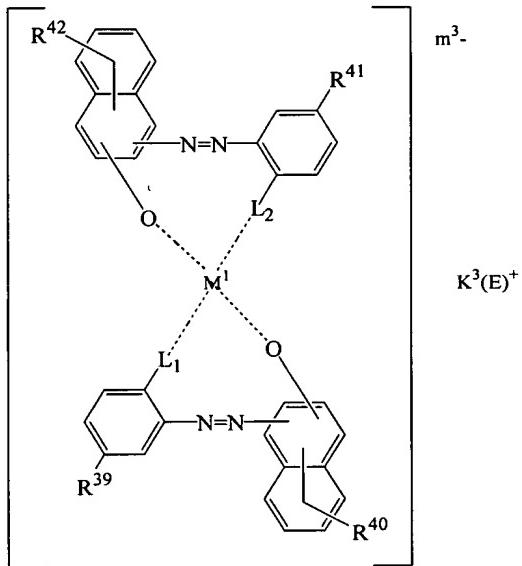
formula [II-b]:



wherein R<sup>53</sup> to R<sup>54</sup>, which may be the same or different, are independently selected from the group consisting of alkyl(having 1 to 8 carbon atoms) or hydrogen,

and wherein  $(F)^{h+}$  represents ammonium ion or a cation derived from an organic amino compounds or a basic dye wherein  $h$  is 1 or 2,  $m^4$  is an integer from 1 to 4 and  $K^4$  is the ratio of  $m^4 / h$ , and

b) monoazo metal complex dye represented by the formula [III]  
formula [III]:



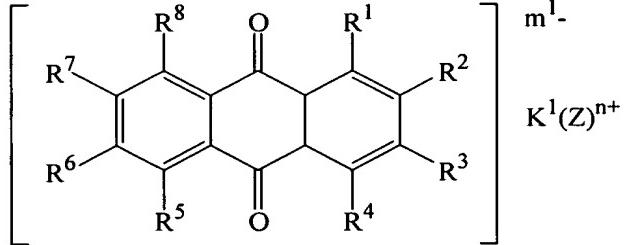
wherein  $R^{39}$ ,  $R^{41}$ , which may be the same or different, are  $Cl$ ,  $SO_2(-R^{44})(-R^{45})$ , or  $SO_2R^{43}$ ;  $R^{44}$  and  $R^{45}$ , which may be the same or different, are independently hydrogen atom, liner or branched C1-C4 alkyl,  $R^{43}$  is linear or branched C1-C4 alkyl;  $R^{40}$  and  $R^{42}$ , which may be the same or different, are hydrogen, liner or branched C1-C18 alkyl group, liner or branched C2-C18 alkenyl group, sulfonamide group, carboxyl group, mesyl group, hydroxyl group, C1-C18 alkoxy group, acethylamino group, benzoylamino group, halogen atom or  $-CONH-R^{46}$ ;  $R^{46}$  is functional group selected from unsubstituted or substituted liner or branched C1-C18 alkyl or unsubstituted or substituted C6-C18 aryl group;  $L_1$  and  $L_2$  are independently O or  $COO$ ;  $(E)^+$  are  $H^+$ , cation of alkali metal, ammonium ion, cations of organic amine including aliphatic primary, secondary and tertiary amines, quaternary ammonium ion;  $K^3$  is an integer;  $m^3$  is 0, 1 or 2; and  $M^1$  is a metal having ionic valency from 2 to 4, wherein the amount of amine salts of anthraquinone dyes of formula [I] or formula

[III] compared to the amount of monoazo complex dyes of the formula [III] is in the ratio of from 5:1 to 1:1..

3. (Cancelled)
4. (Cancelled)
5. (Original) The composition of Claim 1 wherein the thermoplastic resin is polyamide or polyester.
6. (Original) The composition of claim 1 further comprising reinforcing agent.
7. (Original) The transparent article for laser beam welding formed from the composition of Claim 1.
8. (Original) An article formed by laser welding an opaque article for laser beam with the transparent article of Claim 6 using said laser beam.
9. (Previously Presented) A black colorant suitable for being mixed with a thermoplastic resin used in laser welding applications applied to a laser welding comprising a mixture of

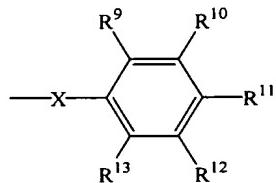
a) amine salts of anthraquinone dyes of formula [I] or formula [II]

wherein Formula [I] is:

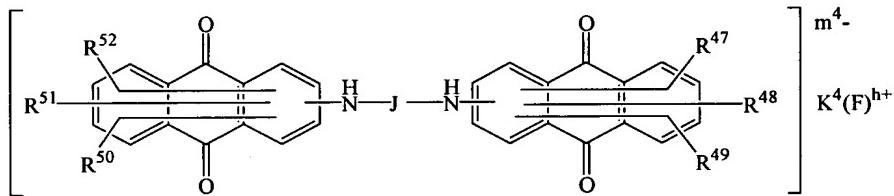


wherein R<sup>1</sup> to R<sup>8</sup>, which may be the same or different, are independently selected from the group consisting of H, alkyl, aryl, alkenyl, alkoxy, amino, hydroxy, halogen atom, acyl, acyloxy, acylamide, acyl-N-alkylamide, carboxyl, alkoxy carbonyl, cyclohexylamide, sulfonyl, formula [I-a], or -Y-W, and at least one of R<sup>1</sup> to R<sup>8</sup> is of formula [I-a]; wherein Y is S, O, or NH; and wherein W is selected from unsubstituted or substituted alkyl group, alkenyl group, and unsubstituted or substituted aryl group; wherein (Z)<sup>n+</sup> represents a cation derived from an organic amine compounds or a basic dye; wherein n is 1 or 2, m<sup>1</sup> is an integer from 1 to 4 and K<sup>1</sup> is the ratio of m<sup>1</sup> / n;

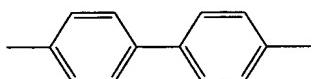
and wherein formula [I-a] is:



wherein X is O or NH, and R<sup>9</sup> to R<sup>13</sup>, which may be the same or different, are independently selected from the group consisting of H, alkyl, aryl, alkenyl, alkoxy, amino, N-alkylamide, N-arylamide, hydroxy, halogen atom, acyl, acyloxy, acylamide, acyl-N-alkylamide, carboxyl, alkoxycarbonyl, or sulfonyl; wherein at least one wherein at least one of R<sup>1</sup> to R<sup>13</sup> is sulfonyl group wherein formula [II] is:

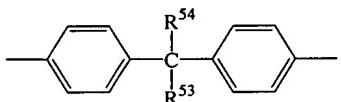


wherein R<sup>47</sup> to R<sup>52</sup>, which may be the same or different, are independently selected from the group consisting of H, alkyl, aryl, alkenyl, alkoxy, amino, N-alkylamide, N-arylamide, hydroxy, halogen atom, acyl, acyloxy, acylamide, acyl-N-alkylamide, carboxyl, alkoxycarbonyl, or sulfonyl; and at least one of R<sup>47</sup> to R<sup>52</sup> is of sulfonyl, and formula J in formula [II] is selected from formula [II-a] or formula [II-b] and binds two anthraquinone; formula [II-a]:



or

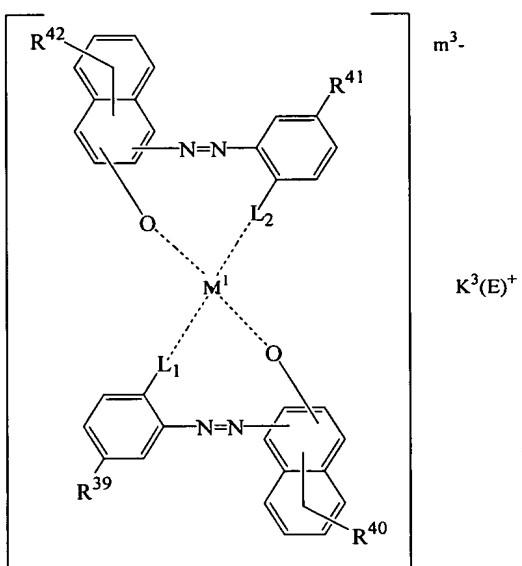
formula [II-b]:



wherein R<sup>53</sup> to R<sup>54</sup>, which may be the same or different, are independently selected from the group consisting of alkyl(having 1 to 8 carbon atoms) or hydrogen, and wherein (F)<sup>h+</sup> represents ammonium ion or a cation derived from an organic amino compounds or a basic dye wherein h is 1 or 2, m<sup>4</sup> is an integer from 1 to 4 and K<sup>4</sup> is the ratio of m<sup>4</sup> / h, and

b) monoazo metal complex dye represented by the formula [III]

formula [III]:



wherein R<sup>39</sup>, R<sup>41</sup>, which may be the same or different, are Cl, SO<sub>2</sub>(-R<sup>44</sup>)(-R<sup>45</sup>), or SO<sub>2</sub>R<sup>43</sup>; R<sup>44</sup> and R<sup>45</sup>, which may be the same or different, are independently hydrogen atom, liner or branched C1-C4 alkyl, R<sup>43</sup> is linear or branched C1-C4 alkyl; R<sup>40</sup> and R<sup>42</sup>, which may be the same or different, are hydrogen, liner or branched C1-C18 alkyl group, liner or branched C2-C18 alkenyl group, sulfonamide group, carboxyl group, mesyl group, hydroxyl group, C1-C18 alkoxy group, acethylamino group, benzoylamino group, halogen atom or -CONH-R<sup>46</sup>; R<sup>46</sup> is functional group

selected from unsubstituted or substituted liner or branched C1-C18 alkyl or unsubstituted or substituted C6-C18 aryl group; L<sub>1</sub> and L<sub>2</sub> are independently O or COO; (E)<sup>+</sup> are H<sup>+</sup>, cation of alkali metal, ammonium ion, cations of organic amine including aliphatic primary, secondary and tertiary amines, quaternary ammonium ion; K<sup>3</sup> is an integer; m<sup>3</sup> is 0, 1 or 2; and M<sup>1</sup> is a metal having ionic valency from 2 to 4.

10. (Cancelled)

11. (Cancelled).

12 (Original) The composition of Claim 2 wherein the laser-transmitting black colorant comprises amine salts of anthraquinone dye of formula [I] wherein at least one of R<sup>9</sup>, R<sup>10</sup>, R<sup>11</sup>, R<sup>12</sup> and R<sup>13</sup> of formula [I-a] is sulfonyl group.

13. (Cancelled)

14. (Original) The black colorant of Claim 9 wherein the laser-transmitting black colorant comprises amine salts of anthraquinone dye of formula [I] where as at least one of R<sup>9</sup>, R<sup>10</sup>, R<sup>11</sup>, R<sup>12</sup> and R<sup>13</sup> of formula [I-a] is sulfonyl group.

15. (Currently Amended) The black colorant of Claim 9 wherein the weight ratio of amount of the amine salts of anthraquinone dyes of formula [I] or formula [II] to that of monoazo complex dyes of the formula [III] is from 5:1 to 1:1.

16. (Original). The composition of Claim 1 wherein said monoazo metal complex dye is a 1:2 type monoazo metal complex dye.

17. (Currently Amended) The composition of Claim 1 wherein the amine salts of anthraquinone dye and the monoazo metal complex dye are present in a weight ratio of from 5:1 to 1:1.

18. (Currently Amended) The composition of Claim 16 wherein the amine salts of anthraquinone dye and the monoazo metal complex dye are present in a weight ratio of from 5:1 to 1:1.